USAWC STRATEGY RESEARCH PROJECT

SUSTAINING THE LONG WAR

by

Colonel Sharon L. Leary
United States Army

Dr. James E. Gordon
Project Adviser

This SRP is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
30 MAR 2007	**Student Research Project**	**00-00-2006 to 00-00-2007**

4. TITLE AND SUBTITLE **Sustaining the Long War**	5a. CONTRACT NUMBER
	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S) **Sharon Leary**	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **U.S. Army War College,Carlisle Barracks,Carlisle,PA,17013-5050**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT
See attached.

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT **unclassified**	b. ABSTRACT **unclassified**	c. THIS PAGE **unclassified**	**Same as Report (SAR)**	**18**	

ABSTRACT

AUTHOR: Colonel Sharon L. Leary

TITLE: Sustaining the Long War

FORMAT: Strategy Research Project

DATE: 26 March 2007 WORD COUNT: 5,258 PAGES: 18

KEY TERMS: Capacity, Capability, Logistics

CLASSIFICATION: Unclassified

Logisticians have studied for decades, methods to right size the logistics footprint on the battlefield while simultaneously maintaining capacity and capability. The logistical support structures and organizations have not changed as rapidly or to the degree required to support the emerging current strategic, operational, and tactical formations. The Army's distribution based logistical system, commonly referred to as just-in-time or distribution based logistics, works well in the continental United States (CONUS) but creates a very brittle supply system that is at much higher risk of failure in today's environment due to inflexibility and vulnerability to damage and destruction. The current logistical system is at the brink of failure; our Army is at the tipping point of not having the capacity or the capability to sustain ground forces for an extended campaign. This paper evaluates the logistical transformation to determine whether the Army has the ability to perform its responsibility to sustain ground forces over an extended battlefield and for the long war.

SUSTAINING THE LONG WAR

The emerging global security environment represents a new set of challenges and threats, and fundamentally changes how America fights its wars. To meet these challenges, the Army has been transforming. The Army has transformed its organizations to a modular force and has changed the way it mans, equips, and trains its force. However, the support structures and organizations have not changed as rapidly or to the degree required to support the emerging current strategic, operational, and tactical formations. The Army's distribution based logistical system, commonly referred to as just-in-time or distribution based logistics, works well within the continental United States. Functionally it is a very brittle supply system that is at much higher risk of failure in today's environment due to inflexibility and vulnerability to damage and destruction, clearly resulting in the potential inability to meet the combatant commander's requirements. The current logistical system is at the brink of failure. Our Army is at the tipping point of not having the capacity or the capability to sustain ground forces for an extended campaign. This paper evaluates the logistical transformation to determine whether the Army has the ability to perform its responsibility to sustain ground forces over an extended battlefield and for the long war.

It is universally recognized and accepted that logistics is "the long pole in the tent" in sustaining military operations. It is equally accepted that logistics has always been one of the defining factors in strategic and operations planning. In designing the Army's future force, the Objective Force, Army leaders envisioned a highly effective force based in the continental United States that is rapidly deployable to anywhere in the world to fight in any environment. This force was designed and is being fielded on the assumption that it would require a minimum of logistics support. Operations in Afghanistan and Iraq have shown that these assumptions are suspect and that the logistics transformation is not matching the rapidly changing operational concepts. The sustainment community has the inherent responsibility to provide the combatant commander with the right supplies, at the right place, at the right time, and in the right quantities.

What Has Not Changed

Since the earliest days of war, commanders have sought ways to streamline logistics. One of earliest descriptors of Army logistics is that logistics is the "tail" and combat troops "the teeth." Army force structure designers commonly refer to this as the tooth to tail ratio. As demonstrated throughout our nation's history, our Army's strength has ebbed and flowed over time. Our Army draws down during time of peace and surges in size and capability during times

of conflicts. In the intervening periods, force structures and support organizations have been reduced. The Army sought ways to adjust the "tooth to tail" ratio to put more teeth into the operational Army. Senior logisticians have studied methods to right size the logistics tail. The past is littered with descriptors such as "revolution in military affairs," a move from "iron mountains" to "just-in-time" logistics all designed to improve the Army's logistics system. U.S. forces are becoming increasingly strategically deployable and operationally agile; a transformed U.S. military must be supported by a new logistics system. The difficulty is implementing change.

In the simplest terms, there are four basic categories of supplies that an Army needs to prosecute a war: fuel, ammunition, maintenance support, and medical support. The Army must have the capacity and capability to provide logistics support to its ground forces. Further complicating the problem, the Army also has the responsibility to provide for common users logistics to other services, agencies, national and international, and coalition military forces. Capacity is a simple math formula: the number of trucks multiplied by the truck's tonnage. For example 22, two and one-half ton trucks equal 55.0 tons of capacity. Capability is more complex, along the lines of an algebraic equation composed of several variables. These variables include capacity, the simple math formula, factored with weather, road tonnage, availability of equipment and personnel, and an infinite number of other variables. Other variables include the ability to know what commodity of supply is needed, in what quantity, who needs the supplies, and what is often referred to in the logistical community as the laws of physics (weight, time, and distance). The responsibility of the Army to support others with common supplies emanates directly from public law. Title 10 of the United States Code charges the Army to *"… be organized, trained and equipped primarily for prompt and sustained combat incident to operations on land."* [1]

The Army is adapting to strategic and technological changes by transforming. What has not changed is the obligation of the sustainment community to provide the combatant commander with the right supplies, at the right place, at the right time, and in the right quantities. There must be enough supplies to conduct any operation that might arise. That obligation remains as vital today as it was during Caesar's time. The Army's demand for supplies has not changed. Today a heavy brigade combat team comprised of M1A2 SEP Abram's tanks, M2A3 Bradley's, Apache helicopters, and Strykers has a huge appetite that must be satiated. During Operation Iraqi Freedom II, from April 2004 through June 2004, the 1st Brigade Combat Team, 1st Cavalry Division alone required a staggering amount of supplies. These supplies included 1,077,908 bottles of water plus 848,755 gallons of potable water and

2,965,955 gallons of fuel.[2] Expanding the observation the quantities become staggering; a mechanized infantry division can consume approximately 3,500 tons of ammunition a day. An armored division can use up to 600,000 gallons of fuel a day, 75 tons of food and medical supplies, and 108,000 gallons of water a day.[3]

To fulfill these requirements the Army has traditionally massed supplies at key points and along a distribution network. The mass-based logistics involved stocking large inventories of parts and supplies that might be required to satisfy mission requirements. During Operation Desert Shield and Operation Desert Storm, the United States sustaining base sent enormous quantities of supplies and equipment to support the combatant commander. However, having the supplies is not enough; the Army must have the capacity and capability to move and distribute the supplies commonly referred to distribution management. Distribution management has been recognized as a critical support requirement since the days of the Red Ball Express, one of World War II's massive logistical operations to sustain Patton's Third Army in August 1944.[4] At the conclusion of Desert Storm, huge stockpiles were still sitting in the ports or holding areas. Because of the extended lines of communication, finite movement assets and systems, the lack of asset visibility, the distribution management system failed desperately… needed supplies did not reach the units neither when nor where they were needed.

Furthermore, the Army supply system is not integrated with the other services' systems. The Marine Corps has many of the same vehicles as the Army and can use many of the same repair parts. However, an Army unit could require a part while a Marine Corps unit operating adjacent to that unit could have an excess of that same part. Because neither service has visibility over the other's supply system, the Army requirement would not be filled. Depending on each service's management decisions and stockage level, a part could cost one service more than it costs another.[5]

The Army's supply system is further stained by operational tempo. In the early stages of Operation Iraqi Freedom (OIF), fast-moving U.S. forces outran their supply lines. Control over the supply chain was still fragmented. Logisticians lacked adequate communications, databases, or visibility over the supply system. While the Department of Defense (DoD) has made a significant effort to modernize its logistics operations, the system still is too large, too slow, too fragmented, too expensive, and technologically obsolete. The Army, with its Title 10 responsibilities to the other services and its involvement in various humanitarian interventions since 1989, has been particularly hard-pressed to improve on Cold War logistics procedures in response to this shift in locations and priorities. The Army has spent millions to automate

existing logistics processes, but these processes are still primarily a pull system. There are two classic categories of supply system. Push, where items are injected into the distribution network based on anticipated requirements. In a pull system, items are not placed into the distribution network until a request is made by the customer. In the Army, the customer is the unit on the ground. When a unit requires an item, a request is submitted and then the unit must wait until the request is received and processed by the automated system to receive the needed supplies. During Desert Shield Desert Storm the Army had enough supplies as highlighted by General Schwarzkopf quote below.

> I can't recall any time in the annals of military history when this number of forces have moved over this distance to put themselves in a position to be able to attack. But what's more important – and I think it's very, very important that I make this point – and that's the logistics bases…Not only did we move the troops out there, but we literally moved thousands and thousands of tons of fuel, of ammunition, of spare parts, of water and of food, out here into this area, because we wanted to have enough supplies on hand so that if we launched this and if we got into a slugfest battle, which we very easily could have gotten into, we'd have enough supplies to last for 60 days. So it was an absolutely gigantic accomplishment, and I can't give credit enough to the logisticians and transporters who were able to pull this off.…[6]

There were enough supplies to last for 60 days, yet if the war had lasted longer than the 100 hours, the Army would have had to conduct an operational pause due to shortages.[7] While combat vehicles were critically short of fuel, over 300 5,000 gallon fuel trucks were a short distance away, simply waiting on instructions on where to go.[8] The irony of this situation is that during Desert Shield Desert Storm, no one complained that we had too much sustainment supplies during the actual execution of the campaign. The exact opposite was true, at the tactical level, soldiers were complaining of not having even the bare essentials.

Has anything changed for our units supporting *OIF*? According to early reports, our combat forces were critically short of food, ammunition, and fuel. In reality, all of those items were readily available in theater. However, no dependable supply system was in place to pinpoint the location of the supplies and equipment, and there was no way for the units on the move to communicate their needs. [9]

> During Operation Iraqi Freedom (OIF), the Third Infantry Division (Mechanized) (3ID[M]) moved farther and faster than any other ground offensive operation in history. Victory was accomplished through brute force logistics…However, with numerous logistical challenges throughout the operation…many units operated dangerously low on ammunition, fuel, water, and other sustainment items.[10]

A closer look further finds a Task Force arriving in Baghdad and establishing a forward operating base with the vast majority of the authorized stock list (ASL) of repair parts, managed

by the main support battalion, still located at Camp New York, Kuwait, over 700 miles away.[11] While it is clear that there were sustainment performance problems, measuring the direct effects on combat operations is difficult to quantify. The "can do" attitude of logisticians, because nothing fails due to logistics, coupled with the fact that in the end combat operations were successful, make it difficult to identify the real problems. However, there is enough evidence to draw some important conclusions. During the early phase of Operation Iraqi Freedom, there is considerable debate whether there was an operational pause during the march towards Baghdad. LTG McKiernan, the Coalition Force Land Component Commander (CFLCC) commanding general strongly stated:

> I would refute any notion that there was any kind of operational pause in this campaign. There was never a day; there was never a moment where there was not continuous pressure put on the regime of Saddam.[12]

The pause was not a deliberate event scheduled to build up stockpiles of supplies; its tertiary effect was the ability for the logistical system to stabilize and improve its organization.[13] Ironically, the logistical challenges that unfolded for the 3rd ID during OIF were some of the very same ones faced in Operation Desert Storm 12 years earlier. Logistics support at the division-level and below during OIF was neither effective nor efficient. Countless articles, After-Action Reviews, and surveys conducted by RAND validate the anecdotal findings. Leaders throughout the Army, from senior logistics officers and the civilian leadership to current and former company commanders, identified two critical shortfalls within the current Army supply chain system: connectivity between logisticians and distribution methods.

Critical information to consider when determining the distribution method is the environment and infrastructure. Over the last decade, history has demonstrated that our Army must be prepared to operate in less than pristine conditions. Contrary to popular perceptions, the areas that the Army operates in rarely have the interstate network found in the United States or the autobahn road network found on the European continent. A look at Somalia, Bosnia, Kosovo, and even humanitarian efforts into Rwanda found the Army operating in an extremely hostile environment with limited infrastructure.

A look through history at recent conflicts reveals that the environment and infrastructure suitable for high-speed maneuver by large mechanized, motorized forces is somewhat limited. The maneuver area consists of a strip of land, ranging from 12 to 38 miles wide. Sandstorms, endemic insects, poisonous reptiles, and flash floods combine to diminish the effectiveness and endurance of men and machines alike. A retrospective "logistics preparation of the battlefield" reveals several other important local factors. First, the nature of the region—underdeveloped at

best, inhospitable at worst—means that, for all practical purposes, everything the Army needs to conduct operations (fuel, water, ammunition, repair parts, and the like) have to be moved into the theater over sea and air lines of communication from the United States to the Gulf region and then forwarded to the fighting units. Dependence on sea lines of communication, in turn, require adequate port facilities to receive materiel, as well as ground lines of communication to distribute materiel from the ports to the fighting forces.

A description of the environment might look like the following. PORT ALPHA was the main supply port for forces operating in theater with a capacity of 1,500 tons per day. Under ideal conditions PORT ALPHA was capable of handling . . . five cargo ships or four troop transports simultaneously. The other significant ports in the area of operations, PORT BRAVO and PORT CHARLIE, had nominal throughput rates of 2,700 and 1,500 tons per day. Once disembarked, supplies had to be moved vast distances over an extremely limited road to reach the forward supply support activities. Compounding the problem was the lack of adequate roads. There was only one "main supply route," which was extremely susceptible to interdiction. Apart from this, there were only desert tracks, the use of which greatly increased wear and tear on vehicles.[14]

At first glance the above description might be a description of the situation during Desert Shield/Desert Storm or the situation confronting senior leaders while preparing for Operation Enduring Freedom or Operation Iraqi Freedom. In actuality it is all of these and a description of the situation facing Rommel's Afrika Korps and the area of operations in North Africa campaign in Libya and Egypt.

Another critical factor for consideration is the network supporting the distribution method. As our Nation transitioned from the industrial age to the information age, our Army changed from analog to digital right along side our Nation. The initial information systems or legacy systems were actually a conglomeration of over 2,500 stove-piped programs handling individual classes of supply or services. Commonly referred to as STAMISs, or Standard Army Management Information Systems, each system handles a specific logistics function and was developed by the combat service support community to improve logistics support to the warfighter. Standard Army Ammunition System (SAAS) for ammunition, Standard Army Retail Supply System (SARSS) for office supplies, packaged petroleum products, and repair parts; and Standard Army Maintenance System (SAMS) for maintenance activities to name a few. However, some of the same vexing problems faced during Operation Joint Guard and the NATO-led Stabilization Force (SFOR) in Bosnia and Herzegovina (Jan. 1996 - Dec. 2005) were experienced by soldiers during Operations Iraqi Freedom.[15] In Bosnia-Herzegovina in 1996,

Task Force Eagle experienced recurring problems with STAMIS communications. Seven years later, units engaged in Operation Iraqi Freedom (OIF) experienced the same problems.[16]

> We have seen them in Desert Shield and Desert Storm. We have seen them in Bosnia. We have seen them in Kosovo. We have seen them in OEF [Operation Enduring Freedom]. And now, we have seen them in OIF. [17]

What Has Changed

Twenty years ago the Army had divisions stationed across the globe from Europe to the Far East. Starting around 1998, the U.S. began repositioning the majority of its forces back into force projection installations across the U.S. Today the Army has over 75% percent of the Army stationed in the U.S..[18] The operational environment has changed as well. A quick look back twenty years sees the Army operating in complex urban areas that are densely populated with increased interagency, non-governmental organizational (NGO), private voluntary organizations (PVO), and criminal influences. Additionally, the U.S. forms coalitions versus establishing alliances; our adversaries are groups that are associated ideologically versus nation states, and have limited tolerance for collateral damage and casualties. Today's battlefield is dispersed and consists of islands of operations that are connected by a fragile spider web of support. The force is no longer task organized and must be flexible to respond to rapidly changing environments. The Army G–4 added,

> The battlefield enemy has changed. He has different values. He places no value on life. He prefers to operate in remote areas and is hard to target. He is not trying to occupy land; he wants our mental space. He opposes freedom and tolerance.[19]

Over the past decade the Army has reduced both the capacity and capabilities across all levels of the Army's supply system. An early reduction in both capacity and capabilities was seen in the redesign of the Army from the Army of Excellence (AOE) to the Force XXI design. The Army made conscious decisions to reorganize the combat service support (CSS) force structure relying on technology to meet end strength requirements without affecting the flexibility and mobility of the heavy brigade task force. An Army of Excellence (AOE) heavy division was 18,000 Soldiers, a Force XXI division was approximately 15,032 with the Division Support Command losing the vast majority of the spaces.[20]

Other changes included a significant reliance on commercial operations, sea shipping, commercial cargo capacity both air and truck. By adopting the commercial business practices, the Army has shifted from effectiveness to efficiencies. For example, the commercial shipping industry primarily uses 20foot and 40foot International Standards Organization containers. The

maximum weight each container can hold is 48,000 and 58,700 pounds or 24.0 and 29.35 tons respectively.[21] These containers are efficiently transloaded from one commercial mode of transportation to another. A 40-foot container can be loaded on a railcar, truck chaise, or loaded on a weather deck of a container ship. In 1998 when the 1st Cavalry Division deployed to Bosnia, the division shipped over 275 containers.[22] During the 2004 deployment to Iraq, the 1st Cavalry Division shipped over 75, 20-foot containers with repair parts that had to be moved from Kuwait to various locations around Baghdad, Iraq.[23] Though ideal for the commercial industry, the Army does not have the same capacity. In the modular Brigade Combat Team (BCT), the Palletized Load System (PLS) and the Load Handle Systems (LHS) are the only systems that can handle a 20-foot container with a payload of 16.5 and 11 tons respectively. The BCT does not have the organic capability to handle a fully loaded 20-foot container or a 40-foot container. Furthermore, with the move to modularity, the divisional structure no longer has a Main Support Battalion that contains a Medium Truck company with the capacity to move the heavier containers. Thus the Army has adopted a commercial business practice without the corresponding capacity or capability to move and distribute supplies.

As Department of Defense (DoD) cashed in on the peace dividend and reduced the size of its force, Army supply policies were modified as well. The Army changed its overarching supply policy several to reduce the Iron Mountains within the Army. The policy included the reductions at the lowest level, the units prescribed load list, while simultaneously reducing the quantity of supplies across the tactical and operational Army, known as Authorized Stockage Lists (ASLs). Additionally, the Army purposefully underfunded the strategic spares programs. The end result was an extremely lean "distribution based supply system," with neither improvements in either the capacity of the distribution systems nor in the capability of the information system.[24] As a result our Army is conducting operations at the end of a very fragile, long line of communication with reduced inventories and an old distribution system.[25]

What Will Not Change

The scope, scale, intensity, and duration of the conflict all remain unknown. We do not know our enemies or their locations. Nor do we know who would fight alongside us in a given situation. Finally, it remains unclear how this long war on terror will fit into the larger framework of military commitments and how those will evolve. For example, will the United States still have forces in Bosnia or Kosovo a year from now? How will the requirement spelled out in the Quadrennial Defense Review to defeat two aggressors in overlapping operations evolve? [26] U.S. forces could be rotating through Afghanistan for years. The Sinai peacekeeping force has

been operating since 1982, and first operations in Bosnia commenced in 1995. Both continue today. Taliban and al Qaeda elements continue forays from sanctuaries along the Pakistan-Afghanistan border. As Operation Anaconda illustrates, it may take U.S. forces to root out determined al Qaeda and Taliban fighters. Given the continued presence of these groups in Afghanistan and the lessons of recent history, it is unlikely that the United States can pull its forces out anytime soon, certainly not before the new central government has established its security forces throughout the country. These operations shrink to insignificance beside what might be seen as complex stability and support operations, the occupation of Iraq. As of December 2003, the Army's commitment in country was about 123,000, with another 30,000 in adjacent areas. At this writing, it remains unclear how much international support the United States will be able to continue to garner to support stability operations in Iraq, but it seems unlikely that it will be enough to allow the Army to scale its in-country forces back substantially.[27]

What Should Never Change

The logistician's ability to comprehend and understand how the combatant commanders want to prosecute the war along with the sustainment characteristics of improvisation, anticipation, responsiveness, integration, and continuity should never change. Another reality that should never change is that nothing fails to logistics. A quick look at either Operation Enduring Freedom or Operation Iraqi Freedom, one discovers the Herculean efforts of our support forces and the innovative techniques designed "on-the-fly" that are enabling our combat forces to continue their fight against global terrorism. During the 1st Cavalry Division's rotation to Iraq, maintenance soldiers assigned to the 115th Forward Support Battalion implemented maintenance procedures replicating those frequently used by professional motor sports. The extreme temperatures, high mileage, and additional weight of armor caused numerous failures of engines and transmissions. The units established "pit stops" for every vehicle returning to the Forward Operating Base (FOB) to prevent catastrophic failures. Additionally, the unit replaced the standard oil, lubricants, and antifreeze with brands used by NASCAR designed to function in extreme temperatures.[28]

What Needs To Change

The first thing that needs to change is the constant analogies between the Army's logistical system and the commercial sector. There are enough differences between the Army and the commercial sector that often the comparisons are not valid. In the commercial sector, profit is still the bottom line and over time is the determining factor on whether a corporation lives or dies. In the Army, dealing with life and death changes the calculations. The just-in-case

stockpiles or redundant capability just might literally be the difference between life and death.[29] Martin van Creveld wrote in 1989:

> If the logistics system in questions is not to be hopelessly fragile and liable to catastrophic breakdown, if it is to function under changing circumstances and be capable of switching from one objective to the next; if in short, it is to be capable of coping with the uncertainty that is the result of enemy action and, as such, inherent in war—in that case a certain amount of redundancy, slack, and waste must not only be tolerated but deliberately built in.[30]

The Army has looked to retailers like Wal-Mart and to UPS and FedEx for solutions to its capability and capacity problems, but this is comparing apples and oranges. A simple comparison outlines the differences; in the state of Georgia Wal-Mart has five distribution centers. A typical Wal-Mart distribution center is more than one million square feet, or the equivalent of 10 Wal-Mart retail stores. These distribution centers have more than 250 dock doors where over 500 tractor-trailers are loaded and shipped every day from one Wal-Mart distribution center alone.[31] The Defense Logistics Agency (DLA) has 26 distribution depots across the globe with 20 located in the U.S. However, materiel and supplies located at the various distribution depots are routed through one defense distribution depot located in New Cumberland, PA, for consolidation into containers or 463L pallets for overseas shipment. Furthermore, it was nearly three years after operations commenced in Afghanistan, that the defense distribution depot Kuwait, Southwest Asia, was established.[32] Wal-Mart would be bankrupted if every shipment leaving the U.S. was funneled through one distribution center or waited three years to open a distribution center where retail stores were already established.

The Army's logistical system must be designed with cargo capacity to deliver the requisite supplies when and where they are needed. Using the earlier analogy, if the Army adopts the 20-foot container as its primary means of shipping cargo, then the distribution system must have the capacity to move 20foot containers from beginning to end. This means the vehicle used to transport the containers must have the capacity that closely matches the maximum capacity of the container and the capability to traverse the last tactical mile to the warfighter. Stated simply, the Army needs trucks that can haul 16.5 tons verses 11.5 tons.

On the battlefield today, the logistician cannot see the requirements; the combatant commander cannot see the support that is enroute to them.

> If we do not connect Army Logisticians, improve the capability of the distribution system, modernize force reception, provide integrated supply management and give the joint force combatant commanders JTAV [Joint Total Asset Visibility], we will study these same lessons after the next major conflict. The Army G-4 is committed to ensure that we will not have to relearn these same lessons. (Christianson, 2003, p. 7)

Logisticians need the ability to receive requests from units, process these requests, and determine the availability of supplies necessary to meet these requests in real time. Not only do logisticians require this capability, but also every level of the Army in theater should be integrated to allow information sharing across the battlefield. The Army has taken a first step in connecting the battlefield logistician with the supply base in the U.S. The Army has fielded very small aperture satellite terminals throughout the U.S. Central Command area of operations.[33] This system allows the logistician to send supply request rapidly, but still requires the logistician to be stationary for about 30 minutes.[34]

Along with improving the connectivity of the battlefield, the distribution system also needs to be upgraded. The Army needs an automated shipping and tracking system that feeds into the logistics internet. With this capability, the supplier can determine what has been sent, when it was sent, where it is now, and when it will arrive. The first capability is a mechanism for submitting requirements and receiving both feedback and confirmation of receipt of the request. The current system is based on an unreliable information flow upwards coupled with non-existent feedback mechanisms. This system has eroded both efficiency and confidence in the system and creates unnecessary delays re-supplying units. To resolve this, users want a network-based information management tool, preferably using existing resources. This tool must send a unit's requirements to its next higher echelon of support, with a digital record, and must feed back availability of that resource at that echelon, or if not available, that the requirement has been sent yet higher. At each subsequently higher echelon, the same process must occur with a simple feedback requirement. Is the asset available? Yes, then when is it being shipped? No, has the requirement been sent to the next echelon? This capability must also track requests by the battalion that submitted them, so that these battalions can be reassigned without losing their requests (or the supplies being delivered can be diverted to their new location or organization).[35]

There are a couple of areas that need to change in order to create an agile, interoperable, lean logistics system. First, the DoD and the Army must devote adequate resources to support logistics transformation. Investment in technology is a vital aspect of transforming logistics. A few areas for investment include sensors, communications capabilities, and radio frequency tags, adequate air and sealift, enterprise software, and automated diagnostics. Second, DoD must create a standard data environment and interoperable e-Commerce and enterprise resource planning (ERP) solutions.[36] Today, there exists hundreds of DoD and Army initiatives that create the potential for real confusion, duplication of effort and delay. Third, the DoD needs to identify a single process owner who will be responsible for overseeing the movement,

storage, and delivery of materiel from factory-to-foxhole. Currently, TRANSCOM is only responsible for a portion of the supply chain. Last, the DoD and the Army must harness the capabilities of private industry. Private industry not only offers lessons learned but also services that could lessen the burden on the DoD.[37]

Conclusion

The Army continues to embrace change at a pace unlike any other in history. The Army's logistics strategy must define a clear path to a seamless system that retains its campaign-quality robustness. The Army's logistical system must have capacity and capability that is responsive to the needs of the combatant commander. The Army's logistical system should be designed like an Olympic caliber athlete able not only to compete in events but have the capacity and capability to win a gold medal. When considering process and policy changes senior logisticians must revamp the entire system and make decisions to resolve the immediate problem and clearly understand the tertiary effects of their decision on future operations. When assessing the success of recent operations in Afghanistan and Iraq, the Army must account for the sheer determination of the logisticians on the battlefield. This determination accounts for an immeasurable amount of the success on the battlefield. Changes solely based on budgetary constraints or the current operations in Iraq and Afghanistan will posture our Army to sustain the current fight not the long war.

Endnotes

[1] Title 10 Armed Forces, U.S. Code, Subtitle B, Part I Chapter 307, Section 3062 (2004).

[2] This data was kept as a matter of record by the author in my own personal notes while serving as the Commander, 115th Forward Support Battalion, 1st Cavalry Division in Baghdad, Iraq, on the dates indicated.

[3] Bruce W. Watson et al., *Military Lessons of the Gulf War*, (Novato, CA: Presidio Press, 1991), 167.

[4] Wikipedia The Free Encyclopedia, "Red Ball Express," available from http://en.wikipedia.org/wiki/Red_Ball_Express; Internet; accessed 11 November 2006.

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